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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,956	01/24/2002	Takayuki Matsushima	111719	4822

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EXAMINER

FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 08/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/053,956

Applicant(s)

MATSUSHIMA, TAKAYUKI

Examiner

Michael J Feely

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1-20 fail to fully describe the silane compound. The claim language says that at least one of the X groups is an alkoxy group. With the exception of a tetraalkoxysilane, the claim language fails to address the remainder of the X groups that are not alkoxy groups. Claims 5-7 describe the presence of at least one non-alkoxy group in the form of an epoxy-containing or a vinyl-containing group; however, the claim language fails to account for other X groups that may be present, i.e. when there is less than a total of four alkoxy groups and epoxy-containing or vinyl-containing groups.

### *Specification*

3. The following is a quotation of the first paragraph of 35 USC §112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of 37 CFR §1.71(a):

- (a) The specification must include a written description of the invention or discovery and of the manner and process of making and using the same, and is required to be in such full, clear, concise, and exact terms as to

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enable any person skilled in the art or science to which the invention or discovery appertains, or with which it is most nearly connected, to make and use the same.

The specification is objected to under 37 CFR §1.71 because: the Specification fails to fully describe the silane compound that is part of the instant invention. The Specification fails to indicate what type of X-group is present when there are less than a total of four alkoxy groups and epoxy-containing or vinyl-containing groups.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language;

or

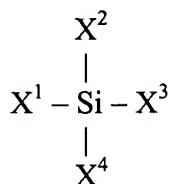
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

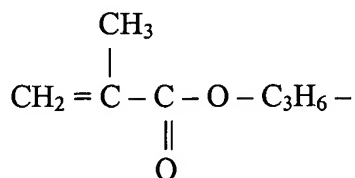
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5. Claims 1-3, 5, and 7-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakai et al. (US Pat. No. 5,492,968).

Regarding claims 1-3, 5, and 7-14, Nakai et al. disclose (1) and adhesive (Abstract; column 23, lines 61-63) comprising a resin component (Abstract; column 4, lines 15-19), a metal chelate (Abstract; column 20, lines 30-35), and a silane coupling agent (Abstract; column 9, line 23 through column 10, line 35), wherein said resin component comprises a thermosetting resin (Abstract; column 4, lines 15-19) and said silane coupling agent comprises a silane compound represented by the general formula (1):



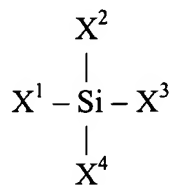
wherein at least one of substituents  $\text{X}^1$  through  $\text{X}^4$  is an alkoxy group (Abstract; column 9, line 23 through column 10, line 35); (2) wherein said alkoxy group is a methoxy group (column 9, lines 43-49); (3) wherein said alkoxy group is an ethoxy group (column 9, lines 43-49); (5) wherein at least one of the substituents  $\text{X}^1$  through  $\text{X}^4$  of said silane compound is a substituent other than an alkoxy group and at least one of said substituents other than the alkoxy group has a vinyl group (column 11, line 16 through column 12, line 18); (7) wherein said substituent having the vinyl group is a  $\gamma$ -methacryloxypropyl group represented by chemical formula (3):



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(column 11, line 16 through column 12, line 18); **(8)** wherein an amount of said metal chelate is from 0.1 parts by weight to 20 parts by weight with respect to 100 parts by weight of said resin component and an amount of silane coupling agent is from 0.1 parts by weight to 35 parts by weight with respect to 100 parts by weight of said resin component (column 22, lines 16-41); **(9 and 10)** wherein said resin component further includes a thermoplastic resin (Abstract; column 2, line 40 through column 4, line 15) and an amount of said thermoplastic resin is 10 parts by weight or more with respect to 100 parts by weight of said thermosetting resin (column 22, lines 16-41); **(11)** wherein said thermosetting resin is an epoxy resin (Abstract; column 4, lines 15-20); **(12)** wherein the epoxy resin is an alicyclic epoxy resin (Abstract; column 4, lines 15-20); and **(13 and 14)** wherein said metal chelate comprises an aluminum chelate as a major component (column 20, lines 30-61).

Regarding claim 15, Nakai et al. disclose **(15)** an adhesive film obtainable by forming an adhesive into a sheet (Abstract; column 23, lines 61-63; column 29, line 67 through column 30, line 3), the adhesive comprising a resin component (Abstract; column 4, lines 15-19), a metal chelate (Abstract; column 20, lines 30-35), and a silane coupling agent (Abstract; column 9, line 23 through column 10, line 35), wherein said resin component comprises a thermosetting resin (Abstract; column 4, lines 15-19) and said silane coupling agent comprises a silane compound represented by the general formula (1):

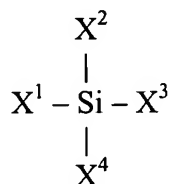


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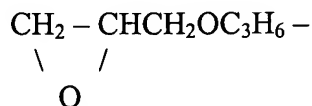
wherein at least one of substituents  $X^1$  through  $X^4$  is an alkoxy group (Abstract; column 9, line 23 through column 10, line 35).

6. Claims 1-4, 6, and 8-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Kageishi et al. (US Pat. No. 6,274,671).

Regarding claims 1-4, 6, and 8-14, Kageishi et al. disclose (1) and adhesive (Abstract; column 2, lines 33-38) comprising a resin component (Abstract; column 5, lines 59-67), a metal chelate (Abstract; column 8, lines 8-17), and a silane coupling agent (Abstract; column 7, lines 1-26), wherein said resin component comprises a thermosetting resin (Abstract; column 5, lines 59-67) and said silane coupling agent comprises a silane compound represented by the general formula (1):



wherein at least one of substituents  $X^1$  through  $X^4$  is an alkoxy group (Abstract; column 7, lines 1-26); (2) wherein said alkoxy group is a methoxy group (column 7, lines 1-26); (3) wherein said alkoxy group is an ethoxy group (column 7, lines 1-26); (4) wherein at least one of the substituents  $X^1$  through  $X^4$  of said silane compound is a substituent other than an alkoxy group and at least one of said substituents other than the alkoxy group has an epoxy group (column 7, lines 1-26); (6) wherein said substituent having the epoxy group is a  $\gamma$ -glycidoxypopyl group represented by chemical formula (2):



(column 7, lines 1-26); **(8)** wherein an amount of said metal chelate is from 0.1 parts by weight to 20 parts by weight with respect to 100 parts by weight of said resin component (column 8, lines 18-25) and an amount of silane coupling agent is from 0.1 parts by weight to 35 parts by weight with respect to 100 parts by weight of said resin component (column 7, lines 27-33); **(9 and 10)** wherein said resin component further includes a thermoplastic resin (Abstract; column 5, lines 25-57) and an amount of said thermoplastic resin is 10 parts by weight or more with respect to 100 parts by weight of said thermosetting resin (column 6, lines 60-67); **(11)** wherein said thermosetting resin is an epoxy resin (Abstract; column 5, lines 59-67); **(12)** wherein the epoxy resin is an alicyclic epoxy resin (Abstract; column 5, lines 59-67); and **(13 and 14)** wherein said metal chelate comprises an aluminum chelate as a major component (Abstract; column 8, lines 8-17).

***Claim Rejections - 35 USC § 102/103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

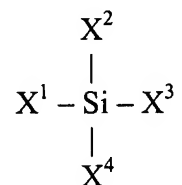
8. Claim 15 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kageishi et al. (US Pat. No. 6,274,671).

Regarding claim 15, Kageishi et al. disclose **(15)** an adhesive film (Abstract; column 2, lines 33-38) comprising a resin component (Abstract; column 5, lines 59-67), a metal chelate (Abstract; column 8, lines 8-17), and a silane coupling agent (Abstract; column 7, lines 1-26),



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wherein said resin component comprises a thermosetting resin (Abstract; column 5, lines 59-67) and said silane coupling agent comprises a silane compound represented by the general formula (1):



wherein at least one of substituents  $\text{X}^1$  through  $\text{X}^4$  is an alkoxy group (Abstract; column 7, lines 1-26).

Kageishi et al. do not disclose that the film is “obtainable by forming an adhesive sheet”; however, this is a product-by-process limitation. It has been found that, “Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process” – *In re Thorpe*, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). The adhesive film of Kageishi et al., formed by coating, would have been the same or an obvious variation of the instant invention.

Therefore, if not explicitly taught in the reference, the teaching would have been obvious to one of ordinary skill in the art at the time of the invention.

***Allowable Subject Matter***

9. Claims 16 and 17 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action.

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10. Claims 18-20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 16 and 17, Nakai et al. is the closest prior art; however, they fail to teach or suggest a laminate structure wherein: *(16)* the adhesive set forth in claim 1 is disposed between a semiconductor chip and a substrate; and *(17)* the adhesive set forth in claim 1 is disposed between a glass substrate and a second substrate. The Examples utilize steel and glass substrates; however, they fail to disclose the adhesive sandwiched between the specific substrate materials set forth in claims 16 and 17.

Regarding claims 18-20, both Kageishi et al. and Nakai et al. are the closet prior art; however, neither reference teaches or suggests the use of a metal chelate that is microencapsulated.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 703-305-0268. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on 703-308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Michael J. Feely  
July 28, 2003

A handwritten signature in black ink, reading "Robert A. Dawson". The signature is fluid and cursive, with the first name "Robert" and last name "Dawson" clearly legible, and a middle initial "A." in between.

Robert Dawson  
Supervisory Patent Examiner  
Technology Center 1700